

IN THE CLAIMS:

Please cancel claims 2 and 3, and amend claims 1, 4, 5-7, and 9 as follows:

- 1 . (Currently Amended) An apparatus for reverse iontophoresis configured such that it is contacted with a specimen comprising:
- a base;
  - a conductive locating pin provided on the base;
  - an on-base electrode provided on the base;
  - an electrolytic gel provided on the on-base electrode adapted for contacting a first part of the specimen, and for extracting a molecule from the first part of the specimen;
  - a sensor chip disposed on the base and underneath the electrolytic gel, the sensor chip comprising a chip base having a locating hole, a pigment membrane disposed on the chip base and containing a pigment that changes [[a]] color by reaction with the molecule, an on-chip electrode being disposed over the locating hole and adapted for electrically connecting to the conductive locating pin through the locating hole and for contacting a second part of the specimen;
  - a light source irradiating light on the pigment membrane through an observation opening in the chip base; and
  - a light sensor receiving a reflection of the light from the pigment membrane through the observation opening in the chip base.

2. (Cancelled)

3. (Cancelled)

4 . (Currently Amended) The apparatus of claim 1 [[3,]] further comprising a power

supply having an anode and a cathode electrically connected to the on-base electrode and the on-chip electrode <sub>1</sub> respectively.

5 . (Currently Amended) The apparatus of claim 1 [[3]], wherein the on-chip electrode is a gel electrode.

6 . (Currently Amended) The apparatus of claim 1[[.]] further comprising a base electrode placed on the base [[adapted]] for contacting a second part of the specimen.

7 . (Currently Amended) The apparatus of claim 6 [[.]] further comprising a power supply having an anode and a cathode electrically connected to the on-base electrode and the base electrode <sub>1</sub> respectively.

8 . (Original) The apparatus of claim 6, wherein the base electrode is a gel electrode.

9. (Currently Amended) A method for reverse iontophoresis comprising:

placing an electrolytic gel on an on-base electrode that is disposed on a base and is connected to an anode of a power supply;

contacting a first part of a specimen with the electrolytic gel and electrically connecting a second part of the specimen to a cathode of the power supply through an on-chip electrode disposed on a chip base of a sensor chip disposed on the base and a conductive locating pin disposed on the base, the conductive locating pin passing through a locating hole of the chip base;

applying a voltage between the first part and the second part by the power supply and extracting a molecule from the specimen to the electrolytic gel and transferring the molecule from the electrolytic gel to a pigment membrane;

changing a color of the pigment membrane by reacting the molecule with the pigment membrane;

irradiating a light on the pigment membrane; and

measuring a change in intensity of the light caused by the change in the color of the pigment membrane.

10. (Original) The method of claim 9, wherein the voltage ranges from 5 volts to 20 volts.

11. (Original) The method of claim 9, wherein the voltage is a pulse voltage.